IAS Delta System/Preliminary Design Review

Agenda

• Introduction	J. Henegar
• System Architecture Overview	T. Ulrich
• Operations Concept	R. Whitman
• IAS Software Subsystem Design	
– Process Control Subsystem	J. Garrahan
– Data Management Subsystem	J. Garrahan
– Evaluation and Analysis Subsystem	D. Kaufmann
– Radiometric Processing Subsystem	J. Rowe
– Geometric Processing Subsystem	J. Storey
– End-to-End Scenarios	J. Garrahan
• IAS Hardware Architecture	D. Slater
• Wrap-up	

Architecture Overview

- IAS receives image data from LP-DAAC
- IAS must process up to 10 scenes per day
- IAS must provide 130 Gbytes of storage
- IAS is supported by Dev and I&T systems
- IAS must support analysts' activities

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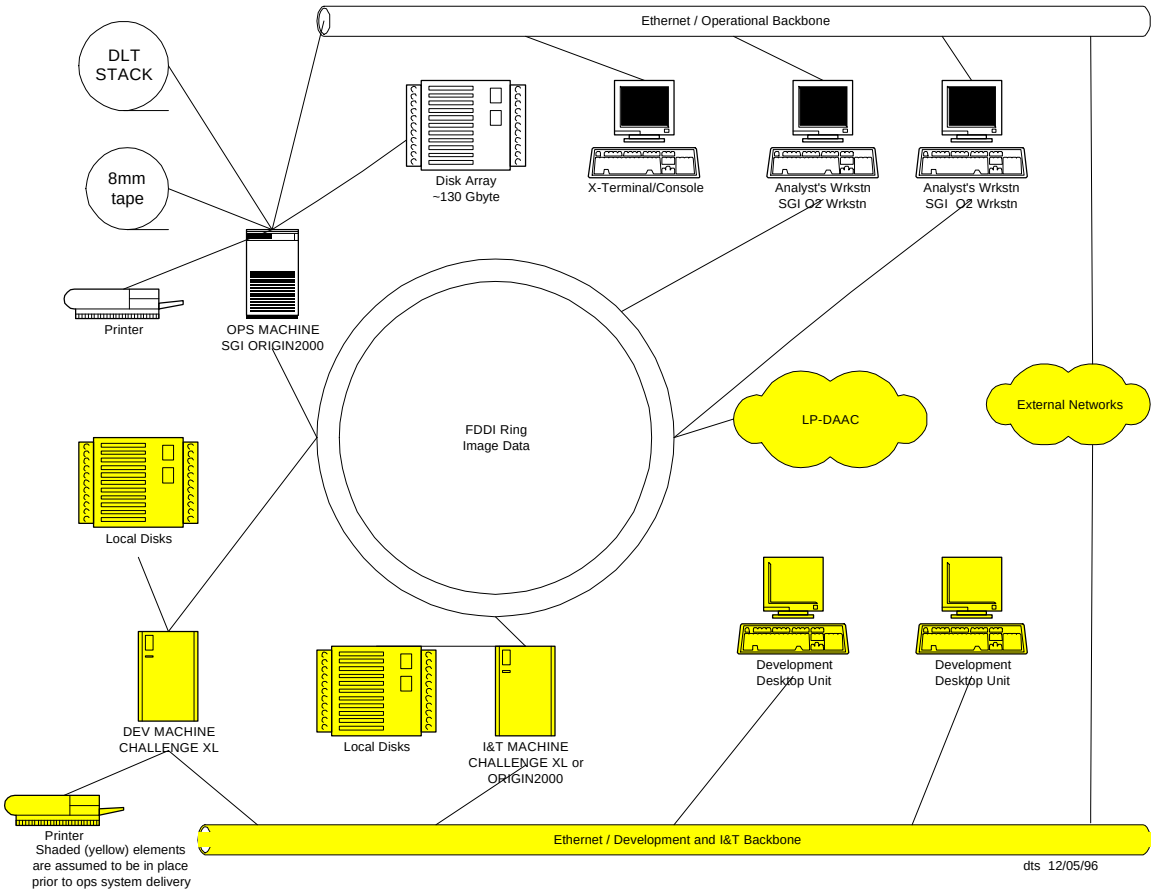
IAS Hardware Architecture



IAS Components

- Silicon Graphics Inc (SGI) Origin2000
  - 2 R10000 processors & 2 Gbytes RAM
  - 130 Gbytes of local on-line storage
- SGI O2 Workstations for Analysts
- X-terminals for console/additional seats
- FDDI for transmission of image data
- Ethernet backbone for other LAN data

IAS Performance

- Processing estimates based on information from multiple sources
- Typical scene will require on the order of 100 GFLOPS of CPU effort
- Worst case scene will require 11.2 Gbytes of Input/Output (I/O) processing
- Worst case scene should run about 7 min.

Issues / Tradeoffs (1 of 2)

- I/O load vs CPU load
  - additional memory reduces I/O load
- System size (2 CPU x 2 Gbyte RAM)
  - limit initial expenditure
  - great capacity for expansion
- Local storage vs networked storage
  - local provides speed, networked is flexible

Issues / Tradeoffs (2 of 2)

- Network architecture
  - Image data segregated on FDDI ring
  - Ethernet backbones separate ops and dev traffic
- SGI Origin2000 vs Challenge XL
  - Existing system is Challenge L --> XL
  - Problems seen with system bus contention
  - SGI IRIX not continued on Challenge line
  - Origin2000 cost is 25% less than Challenge

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Wrap-up

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